



April 7, 2017

FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED GOVERNMENTAL AGENCIES AND PUBLIC GROUPS

As required by state and federal rules for determining whether an Environmental Impact Statement is necessary, an environmental review has been performed on the proposed action below:

| | |
|----------------|--|
| Project | Wastewater Treatment System Improvements |
| Location | Terry, Montana |
| Project Number | WPCSRF Project # C301285 |
| Total Cost | \$2,804,000 |

The Town of Terry, through a May 2014 Preliminary Engineering Report (PER) for Wastewater Treatment Upgrade prepared by Stahly Engineering & Associates Inc., has identified the need to upgrade their wastewater treatment system. The original facultative lagoon treatment system was constructed in 1965 and included two primary lagoons with a discharge to the Yellowstone River via the Buffalo Rapid Drain Ditch (BRDD). In 1998 some preventative improvements were completed to the lagoons which included removing the accumulated sludge and installation of protective gabions on the interior cell embankments. Also, the town installed a new storm water system which diverted storm water from the sanitary sewer system. Mostly due to the age of the wastewater treatment system, numerous deficiencies were found by the town's engineer during their evaluation of the system. Deficiencies included many operational structures, such as the influent flow splitter box, which could not be operated due to corrosion. Moreover, this splitter box is a confined space, with untreated sewage, methane and hydrogen sulfide, which the operator must enter to maintain. Another significant deficiency related to public health risk is due to the lack of disinfection of the wastewater prior to discharge to the BRDD (and Yellowstone River). The PER also identified several sections of corrugated metal pipe in the trunk main located in a low lying marshy area that is suspected of allowing a significant amount of infiltration (ground water) into the system. The Town of Terry is authorized to discharge their wastewater to the BRDD under General Permit MTG580017. The current discharge permit expires on December 31, 2017 and includes several special conditions and a compliance schedule which became effective January 1, 2017. The conditions include: the facility be capable of monitoring to demonstrate compliance with percent removal of the 5-day measure of biological oxidation demand (BOD₅) and total suspended solids (TSS), and that the facility is capable of accurate effluent flow monitoring. The compliance schedule includes seasonal effluent limits for *E. coli* bacteria. The current treatment facility will not meet either special condition or the effluent limits for *E. coli* bacteria. The new discharge permit will be reissued by January 1, 2018 and due to a possible ammonia limit in the new permit, the town may move their outfall from the BRDD to the Yellowstone River.

Due to the above noted issues, the town wishes to make improvements to their wastewater system. The first phase of proposed improvements, to be completed the summer of 2017, would include constructing approximately 3,300 feet of new trunk sewer main which would reroute the main to avoid the low lying, swampy area. The second phase of improvements, to be completed in the summer of 2018, will include the construction of a new primary treatment cell and associated piping west of the existing treatment cells; replacing the interconnecting piping and

influent structures to the two existing cells; and constructing a new building to enclose a new ultraviolet (UV) disinfection system, and potentially a new outfall pipe will be constructed to the Yellowstone River. Sludge depths in the existing cells will be evaluated, and if determined to be excessive will also be removed as part of the second phase of work. Once the new secondary treatment cell is operational, the existing cells will be leak tested to verify they meet state standards for leakage. If a cell (or both cells) is found to be leaking, another project phase may be required to repair the leaking cell(s).

The proposed wastewater system improvements, including administration, engineering, and construction, are estimated to cost approximately \$2,804,000. The town has obtained three grants and will borrow money from the Water Pollution Control State Revolving Fund (WPCSRF) loan program to fund the proposed project. The grants include: \$750,000 from the Treasure State Endowment Program (TSEP); \$125,000 from the Renewable Resource Grant and Loan Program (RRGL); and \$190,000 from the Army Corps of Engineering Water Resources Development Act Section 595. A 20 year loan with an interest rate of 2.5% from the WPCSRF program for \$1,739,000 will complete the funding package for the project.

Federal and State grant/loan programs will fund the project. Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species, and historical sites are not expected to be adversely impacted as a result of the proposed project. Additional environmental impacts related to land use, water quality, air quality, public health, energy, noise, growth, and sludge disposal were also assessed. While short-term impacts may occur as a result of proposed improvements, no significant long-term environmental impacts are expected.


An environmental assessment (EA), which describes the project and analyzes the impacts in more detail, is available for public scrutiny on the DEQ web site <http://deq.mt.gov/Public/ea> and at the following locations:

Jerry Paddock, P.E.
Department of Environmental Quality
1520 East Sixth Avenue
P.O. Box 200901
Helena, MT 59620-09011
jpaddock@mt.gov

Rolane Christofferson, Mayor
Town of Terry
PO Box 650
Terry, MT 59349

Comments on the EA may be submitted to the Department of Environmental Quality at the above address. After evaluating substantive comments received, the department will revise the environmental assessment or determine if an environmental impact statement is necessary. If no substantive comments are received during the comment period, or if substantive comments are received and evaluated and the environmental impacts are still determined to be non-significant, the agency will make a final decision. No administrative action will be taken on the project for at least 30 calendar days after release of the Finding of No Significant Impact.

Sincerely,



Todd Teegarden, Bureau Chief
Engineering Bureau

TOWN OF TERRY
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS

ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant: Town of Terry

Address: PO Box 650
Terry, MT 59349

Project Number: SRF Project No. C301285

B. CONTACT PERSON

Name: Rolane Christofferson, Mayor

Address: PO Box 650
Terry, MT 59349

Telephone: (406) 635-5411

C. ABSTRACT

The Town of Terry, through a May 2014 Preliminary Engineering Report (PER) for Wastewater Treatment Upgrade prepared by Stahly Engineering & Associates Inc., has identified the need to upgrade their wastewater treatment system. The original facultative lagoon treatment system was constructed in 1965 and included two primary lagoons with a discharge to the Yellowstone River via the Buffalo Rapid Drain Ditch (BRDD). In 1998 some preventative improvements were completed to the lagoons which included removing the accumulated sludge and installation of protective gabions on the interior cell embankments. Also, the town installed a new storm water system which diverted storm water from the sanitary sewer system. Mostly due to the age of the wastewater treatment system, numerous deficiencies were found by the town's engineer during their evaluation of the system. Deficiencies included many operational structures, such as the influent flow splitter box, which could not be operated due to corrosion. Moreover, this splitter box is a confined space, with untreated sewage, methane and hydrogen sulfide, which the operator must enter to maintain. Another significant deficiency related to public health risk is due to the lack of disinfection of the wastewater prior to discharge to the irrigation drain ditch (and Yellowstone River). The immediate potential risk would be to hikers, hunters, and recreationists if they have contact with the non-disinfected water in the BRDD and Yellowstone River, as well as downstream potable water users. Inflow and outflow measurements cannot be recorded, but are necessary to discern if the lagoon liners leak untreated wastewater to ground water. The existing cells were constructed using clay liners, which typically develop leaks over time due to shrinking and cracking. Because the normal operation of the lagoons is to store and release wastewater, shrinking and cracking of the clay could be more prevalent in these lagoons. In addition to the 600 existing residents, a slaughterhouse currently operates one day a week. Because slaughterhouse

wastewater is much stronger than domestic waste, the potential impacts to the treatment system from slaughterhouse waste will be evaluated prior to finalizing the proposed system upgrade. As noted above, the sludge was removed in 1998; however sludge was observed in the vicinity of the inlets to the lagoons.

Between 1996 and 1998, a majority of the sanitary sewer collection system was replaced, including all manholes, and appears to be in good condition. However, the PER identified several sections of trunk sewer main, which was constructed in 1964, that is located in a low lying marshy area with high groundwater and was suspected of allowing a significant amount of infiltration (ground water) into the system. Recent attempts to run cameras through the trunk sewer main failed due to blockages in the pipe which are most likely due from silt which has been washed in with the inflow of groundwater. The trunk sewer main was found to be corrugated metal pipe, which is susceptible to corrosion from wastewater. Based on the age and type of pipe, in addition to the swampy location, the pipe is most likely allowing infiltration to occur. Moreover, the marshy area makes accessing the trunk main very difficult to maintain and repair.

The Town of Terry is authorized to discharge their wastewater to the BRDD under General Permit MTG580017. The current discharge permit expires on December 31, 2017 and includes several special conditions and a compliance schedule which became effective January 1, 2017. The conditions include: the facility be capable of monitoring to demonstrate compliance with percent removal of the 5-day measure of biological oxidation demand (BOD₅) and total suspended solids (TSS), and that the facility is capable of accurate effluent flow monitoring. The compliance schedule includes seasonal effluent limits for *E. coli* bacteria. The current treatment facility will not meet either special condition or the effluent limits for *E. coli* bacteria. Additionally, the new discharge permit will be reissued by January 1, 2018 and may include an ammonia limit.

Due to the above noted issues, the town wishes to make improvements to their wastewater system. The first phase of proposed improvements, to be completed the summer of 2017, would include constructing approximately 3,300 feet of new trunk sewer main which would reroute the main to avoid the low lying, swampy area. The second phase of improvements, to be completed in the summer of 2018, would include the construction of a new primary treatment cell and associated piping west of the existing treatment cells; replacing the interconnecting piping and influent structures to the two existing cells; and constructing a new building to enclose a new ultraviolet (UV) disinfection system. If the new discharge permit includes an ammonia limit, the town may move their outfall from the BRDD to the Yellowstone River. To discharge to the Yellowstone River, a new outfall pipe would be constructed to provide a direct discharge to the Yellowstone River. Sludge depths in the existing cells will be evaluated, and if determined to be excessive, the sludge will also be removed as part of the second phase of work. Additionally, after the new secondary treatment cell is operational, the existing cells will be leak tested to verify they meet state standards for leakage. If a cell (or both cells) is found to be leaking, another project phase may be required to repair the leaking cell(s).

The proposed wastewater system improvements, including administration, engineering, and construction, are estimated to cost approximately \$2,804,000. The town has obtained three grants and will borrow money from the Water Pollution Control State Revolving Fund (WPCSRF) loan program to fund the proposed project. The grants

include: \$750,000 from the Treasure State Endowment Program (TSEP); \$125,000 from the Renewable Resource Grant and Loan Program (RRGL); and \$190,000 from the Army Corps of Engineering Water Resources Development Act Section 595. A 20 year loan with an interest rate of 2.5% from the WPCSRF program for \$1,739,000 will complete the funding package for the project.

Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species and historical sites are not expected to be adversely impacted as a result of the proposed project. Additional environmental impacts related to land use, water quality, air quality, public health, energy, noise, growth, and sludge disposal were also assessed. No significant long-term environmental impacts were identified.

Under Montana law, (75-6-112, MCA), no person may construct, extend, or use a public sewage system until DEQ has reviewed and approved the plans and specifications for the project. Under the Montana Water Pollution Control State Revolving Fund Act, DEQ may loan money to municipalities for construction of public sewage systems.

The DEQ, Engineering Bureau, has prepared this Environmental Assessment to satisfy the requirements of the Montana Environmental Policy Act (MEPA) and the National Environmental Policy Act (NEPA).

D. COMMENT PERIOD

Thirty (30) calendar days.

II. PURPOSE OF AND NEED FOR ACTION

The Town of Terry, through a May 2014 Preliminary Engineering Report (PER) for Wastewater Treatment Upgrade prepared by Stahly Engineering & Associates Inc., has identified the need to upgrade their wastewater treatment system. The original facultative lagoon treatment system was constructed in 1965 and included two primary lagoons with a discharge to the Yellowstone River via the Buffalo Rapid Drain Ditch (BRDD). In 1998 some preventative improvements were completed to the lagoons which included removing the accumulated sludge and installation of protective gabions on the interior cell embankments. Also, the town installed a new storm water system which diverted storm water from the sanitary sewer system. Mostly due to the age of the wastewater treatment system, numerous deficiencies were found by the town's engineer during their evaluation of the system. Deficiencies included many operational structures, such as the influent flow splitter box, which could not be operated due to corrosion. Moreover, this splitter box is a confined space, with untreated sewage, methane and hydrogen sulfide, which the operator must enter to maintain. Another significant deficiency related to public health risk is due to the lack of disinfection of the wastewater prior to discharge to the irrigation drain ditch (and Yellowstone River). The immediate potential risk would be to hikers, hunters, and recreationists if they have contact with the non-disinfected water in the BRDD and Yellowstone River, as well as downstream potable water users. Inflow and outflow measurements cannot be recorded, but are necessary to discern if the lagoon liners leak untreated wastewater to ground water. The existing cells were constructed using clay liners, which typically develop leaks over time due to shrinking and cracking. Because the normal operation of the lagoons is to store and release wastewater, shrinking and cracking of the clay could be more prevalent in these lagoons. In addition to the 600 existing residents, a slaughterhouse currently operates one day a week. Because slaughterhouse wastewater is much stronger than domestic waste, the potential impacts to the treatment system from slaughterhouse waste will be evaluated prior to

finalizing the proposed system upgrade. As noted above, the sludge was removed in 1998; however sludge was observed in the vicinity of the inlets to the lagoons.

Between 1996 and 1998, a majority of sanitary sewer collection system was replaced, including all manholes, and appears to be in good condition. However, the town is aware of sump pumps and artesian wells that discharge to the collection system. The PER also identified several sections of trunk sewer main, which was constructed in 1964, that is located in a low lying marshy area with high groundwater and is suspected of allowing a significant amount of infiltration (ground water) into the system. Attempts to run cameras through the trunk sewer main failed due to blockages in the pipe, which are most likely due from silt which has been washed in with the inflow of groundwater. The trunk sewer main is corrugated metal pipe, which is susceptible to corrosion from wastewater. Based on the age and type of pipe, in addition to the swampy location, the pipe is most likely allowing infiltration to occur. Moreover, the marshy area makes accessing the trunk main very difficult to maintain and repair.

The Town of Terry is authorized to discharge their wastewater to the BRDD under General Permit MTG580017. The current discharge permit expires on December 31, 2017 and includes several special conditions and a compliance schedule which became effective January 1, 2017. The conditions include: the facility be capable of monitoring to demonstrate compliance with percent removal of the 5-day measure of biological oxidation demand (BOD₅) and total suspended solids (TSS), and that the facility is capable of accurate effluent flow monitoring. The compliance schedule includes seasonal effluent limits for *E. coli* bacteria. The current treatment facility will not meet either special condition or the effluent limits for *E. coli* bacteria. Additionally, the new discharge permit will reissued by January 1, 2018 and may include an ammonia limit.

Due to the above noted issues, the town wishes to make improvements to their wastewater system. The first phase of proposed improvements, to be completed the summer of 2017, will include replacing approximately 3,300 feet of trunk sewer main by rerouting the trunk main to avoid the low lying, swampy area. The second phase of improvements, to be completed in the summer of 2018, will include the construction of a new primary treatment cell and associated piping west of the existing treatment cells; replacing the interconnecting piping and influent structures to the two existing cells; and constructing a new building to enclose a new ultraviolet (UV) disinfection system. If the new discharge permit includes an ammonia limit, the town may move their outfall from the BRDD to the Yellowstone River. To discharge to the Yellowstone River, a new outfall pipe would be constructed to provide a direct discharge to the Yellowstone River. Sludge depths in the existing cells will be evaluated, and if determined to be excessive the sludge will also be removed as part of the second phase of work. Additionally, after the new secondary treatment cell is operational, the existing cells will be leak tested to verify if they meet state standards for leakage. If a cell (or both cells) is found to be leaking, another project phase may be required to repair the leaking cell(s).

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION AND COSTS

The PER did consider construction of a large storage cell to store treated wastewater (effluent) during the winter and then spray the effluent onto crops during the growing season. This would have eliminated the need for the discharge to the Yellowstone River. However, due to the high capital cost to construct the storage cell, this alternative was not considered a viable solution for the town and was not given further consideration. Alternatives were considered in a Technical Memorandum to rehabilitate (slip-line) the existing trunk main and manholes, replace the trunk main and manholes, or realign/relocate the existing trunk main to avoid the swamp.

Due to the swampy conditions while working on new pipe and manholes, and the short term and long term access, the slip-lining and pipe/manhole replacement alternatives were considered to not be feasible. The most feasible alternative was to realign the trunk main to avoid the swampy area. The new alignment would allow normal construction methods, improved access for the long term maintenance of the pipe system, and improve the pipe grade to the treatment cells. All alternatives would include removal of sludge from the old lagoons and hauling it to the landfill.

A. Five alternatives including the no action alternative for upgrading the wastewater treatment system were evaluated in the PER. These included the following alternatives:

| | |
|-----------------|--------------------------------------|
| Alternative T-0 | No Action |
| Alternative T-1 | Facultative Lagoon |
| Alternative T-2 | Facultative Lagoons Polishing System |
| Alternative T-3 | Aerated Lagoon |
| Alternative T-4 | Mechanical Plant |

ALTERNATIVE T-0 NO ACTION – The no-action alternative would result in not taking any action to correct the problems with the current treatment system. The town would continue to operate the existing lagoons which may continue to cause violations with the town's discharge permit and potential fines by DEQ. Growth could not occur in the town due to the lack of additional treatment capacity of the existing system, the treatment system operator would continue to be subject to maintaining the system in an unsafe environment, and there would continue to be the potential public health risks associated with the effluent because it is not disinfected prior to leaving the treatment facility. Based on these concerns, the no-action alternative was not considered to be a viable option for the town.

ALTERNATIVE T-1 FACULATIVE LAGOON – This alternative would include upgrading all the interconnecting piping and inlet control structures that serve the existing two treatment cells, constructing an additional treatment cell, constructing an ultraviolet light disinfection system, and outfall piping system to the Yellowstone River. The new treatment cell would be constructed west of the existing treatment cell on town-owned property. Once all work is complete, the proposed upgraded wastewater treatment system would include two primary wastewater treatment ponds, one cell would be 4.8 acres and one cell would be 6.3 acres, and one 8.3 acre cell for secondary treatment and storage. The new primary cell would be approximately six feet deep and would be lined using a synthetic liner. A minimum detention time of 40 days would be provided in the primary cells and a minimum detention time of 180 days would be provided overall (cells 1, 2, and 3). An ultraviolet (UV) disinfection system is proposed to disinfect the effluent from the final cell prior to discharging. The UV system would be located in a new building to protect the system from weather. The new wastewater discharge permit may include limits for ammonia, which a facultative lagoon system may not adequately remove from the effluent, and therefore the town may not continue to discharge to the Buffalo Rapids Drain Ditch (BRDD). Therefore, a new piping system, approximately 4,000 feet system long, would be provided to allow direct discharge of the effluent to the Yellowstone River. A rock (rip-rap) apron would be constructed on the bank of the river for the effluent to drain onto. (See Figure 1). After the new cell is constructed and operational, all flow would be diverted to the new cell so the existing cells could be leak tested to ensure they meet current state leakage rates. All improvements would be completed on property owned by the town and would be designed and constructed to meet all state design criteria for public wastewater treatment systems. This alternative was determined to be a viable solution for the town.

ALTERNATIVE T-2 FACULATIVE LAGOON POLISHING SYSTEM – This alternative would include constructing fixed film biological treatment modules to “polish” the effluent from the existing treatment cells prior to final disposal instead of improving the existing cells and constructing an additional cell. The fixed film biological modules (modules) are expected to reduce the nitrogen level of the wastewater by recirculating wastewater through a series of these modules. The modules would be placed underground to minimize odors and visual impacts. Access to the modules would be from hatches on the surface. A minimum detention time of 40 days would be provided in the two existing cells. All improvements would be completed on property owned by the town or within right-of-ways owned by the town. Treated effluent from the modules would be disinfected and then released into the Buffalo Rapids Drain Ditch (BRDD). This alternative was expected to remove ammonia during treatment of the wastewater which should allow the continued direct discharge to the BRDD. A backup generator would be provided for the modules and the ultraviolet light disinfection system. This alternative was determined to be a viable solution for the town.

ALTERNATIVE T-3 AERATED LAGOONS – This alternative would include constructing a three-cell aerated treatment system on approximately 6 acres of town-owned land east of the existing lagoons. The existing lagoons would be drained and the sludge would be removed. They could then be used for winter storage if the town decided to utilize spray irrigation of the treated effluent in the future instead of discharging to the river. The proposed aerated treatment system would be designed and constructed to meet state design standards, so they would include two fully aerated cells and a final cell which would be partially aerated to allow for a quiescent zone near the outfall area. All cells would have capacity of approximately 1.7 million gallons and would be lined using a synthetic liner. A minimum detention time (under aeration) of 20 days would be provided before the treated wastewater would be disinfected using ultraviolet lights (UV) and released to the Buffalo Rapids Drain Ditch (BRDD). This alternative was expected to remove ammonia during treatment of the wastewater which should allow the continued direct discharge to the BRDD. A backup generator will be provided for the UV disinfection system. This alternative was determined to be a viable solution for the town.

ALTERNATIVE T-4 MECHANICAL PLANT – This alternative would include the construction of a mechanical treatment system using sequencing batch reactor technology (SBR). SBR systems are a fill and draw activated sludge wastewater treatment system that utilizes a single basin for treatment, settling, and clarification. To provide continuous treatment, SBR systems typically contain two basins that are operated with alternating cycles. SBRs generally contain the following phases of operation: fill, react, settle, decant and idle. Pretreatment of the wastewater would include trash screens and a grit chamber, which would be enclosed in a heated and ventilated building. A small building would be provided for an office and would be connected to the pretreatment building. Both proposed SBR basins would be followed by aerobic digester basins, a small equalization basin, and ultraviolet lights (UV) for disinfection of the water. After UV, the water would be released into the Buffalo Rapids Drain Ditch (BRDD) so it could flow to the Yellowstone River. This alternative was expected to remove ammonia during treatment of the wastewater which should allow the continued direct discharge to the BRDD. The disinfection system would be within a heated and ventilated building. The existing lagoons would be drained and the sludge would be removed. The proposed SBR system would be designed and constructed to meet state design standards and would be completed on property owned by the town. This alternative was determined to be a viable solution for the town.

B. COST COMPARISON - PRESENT WORTH ANALYSIS

The present worth analysis is a means of comparing alternatives in present day dollars and can be used to determine the most cost-effective alternative(s). An alternative with low initial capital cost may not be the most cost efficient project if high monthly operation and maintenance costs occur over the life of the alternative. An interest rate of 0.8% over the 20-year planning period was used in the analysis. Table 1 provides a summary of the present worth analysis of the feasible alternatives considered.

| TABLE 1 ECONOMIC EVALUATION OF TREATMENT SYSTEM ALTERNATIVES | | | | | | |
|---|--|--------------|-----------------|-------------------|-----------------------------|---------------------|
| Alternative Number | Alternative | Capital Cost | Annual O&M Cost | Present Worth O&M | Present Worth Salvage Value | Total Present Worth |
| T-1 | Facultative Lagoons | \$1,594,000 | \$10,550 | \$195,000 | \$194,000 | \$1,595,000 |
| T-2 | Facultative Lagoons w/Polishing System | \$1,820,000 | \$11,000 | \$204,000 | \$253,000 | \$1,771,000 |
| T-3 | Aerated Lagoon | \$2,710,000 | \$37,000 | \$684,000 | \$222,000 | \$3,170,000 |
| T-4 | Mechanical Treatment | \$4,680,000 | \$162,000 | \$2,990,000 | \$352,000 | \$7,300,000 |

The proposed treatment system upgrades, including administration, engineering and construction, are estimated to cost approximately \$2,804,000. Funding sources for the improvements include grants from the Montana Department of Commerce Treasure State Endowment Fund (TSEP) for \$750,000; \$125,000 from the Renewable Resource Grant and Loan (RRGL) program; and \$190,000 from the Army Corps of Engineering Water Resources Development Act Section 595. The town will borrow \$1,739,000 at a 2.5 percent rate interest from the Water Pollution Control State Revolving Fund (WPCSRF) loan program. The Phase 1 work (trunk main) is expected to begin in the summer of 2017 and take several months. The Phase 2 work (treatment system) is expected to take up to 6 months to complete and will begin in the summer of 2018.

C. BASIS OF SELECTION OF PREFERRED ALTERNATIVE

Selection of the preferred alternative was based upon several criteria, both monetary and non-monetary. The ranking criteria are provided in Table 2.

| TABLE 2 RANKING IMPACTS SUMMARY FOR TREATMENT ALTERNATIVES | | | | | | | | | | | | | |
|---|-----------------------|----|-----------------------|----|-----------------------|----|--------------------------|----|-------------------------|----|----------------|----|-------|
| Alternative | Technical Feasibility | | Environmental Impacts | | Financial Feasibility | | Public Health and Safety | | Operation & Maintenance | | Public Comment | | TOTAL |
| | Weight | 5 | Weight | 3 | Weight | 10 | Weight | 7 | Weight | 4 | Weight | 5 | |
| T-1 | 8 | 40 | 5 | 15 | 8 | 80 | 7 | 49 | 9 | 36 | 8 | 40 | 260 |
| T-2 | 7 | 35 | 6 | 18 | 8 | 80 | 7 | 49 | 8 | 32 | 7 | 35 | 249 |
| T-3 | 6 | 30 | 5 | 15 | 5 | 50 | 7 | 49 | 8 | 32 | 5 | 25 | 201 |
| T-4 | 5 | 25 | 7 | 21 | 0 | 0 | 9 | 63 | 5 | 20 | 5 | 25 | 154 |

Each alternative was assigned a score ranging from 0 to 10 where a 0 represents the most negative impact and a score of 10 would be the highest benefit. As noted in Table 2, treatment alternative T-1 (Facultative Lagoons) received the most points for technical feasibility, public comment, operations and maintenance, and financial feasibility. Alternative T-1 also had the lowest capital costs and operations of the alternatives considered.

The average monthly sewer rate will increase \$7.52 per month, resulting in a new average sewer rate of \$48.52 per month per user. The financial impact of this project on the system users is shown in Table 3. Based on the EPA guidance for project affordability, the proposed project will result in a monthly cost per household that is less than 1% of the monthly median household income, and therefore, is not expected to impose a substantial economic hardship on households within the community

| TABLE 3 PROJECT AFFORDABILITY | |
|---|------------|
| Existing monthly wastewater service rate | \$41.00 |
| Total monthly user cost ¹ | \$48.52 |
| Monthly median household income (mMHI) ² | \$2,835.67 |
| User rate as a percentage of mMHI | 0.9 % |

¹ April 17, 2014 and modified 3/27/17 Uniform Application for MT Public Facility Projects

² Based on 2010 American Communities Survey (DOC) - (Terry town)

IV. AFFECTED ENVIRONMENT

A. PLANNING AREA AND MAPS

Figure 1 shows the location of the proposed wastewater treatment system and outfall to the Yellowstone River improvements. Figure 2 shows the location of the proposed re-alignment of the sewer trunk main outfall. The town's wastewater facility system is shown in Figure 3. Figure 4 shows the site planning area for the Town of Terry. A location map is included in Figure 5 which shows the general location of the Town of Terry in the state of Montana. Terry is located in central Prairie County and located along the Yellowstone River and Interstate 84, midway between Miles City and Glendive.

B. POPULATION AND FLOW PROJECTIONS

The wastewater flow was measured by the town's engineer for several days in October 2013 and was determined to be approximately 73,700 gallons per day (gpd) for the current population of 600 people. Growth is expected to occur at approximately a 3% rate over the next 20 years and is projected to be about 1,050 in 2034. The wastewater flow rate is projected to be 115,000 gpd by 2034. However, additional flow monitoring will be performed after the trunk sewer main has been installed and the town has addressed the infiltration of water due to artesian wells and sump pumps. Flow rates based on new measured discharges will be used in the design of the proposed upgrade.

C. NATURAL FEATURES

The Town of Terry is located in eastern Montana in what is typically called the eastern plains of Montana. Terry is located adjacent to the Yellowstone River and is surrounded by agricultural lands. The surface soils typically consist of well-drained silty clays and fine sandy loams. The elevation of the town is 2,251, which is about 50 feet above the Yellowstone River. The depth to groundwater in the area varies from 12 feet to 20 feet and is the source for many private water systems.

Average annual precipitation in Terry is approximately 12 inches. The wettest months are typically May and June. The average maximum temperature for July is 89 degrees and the average minimum temperature in January is 2 degrees.

V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. DIRECT AND INDIRECT ENVIRONMENTAL IMPACTS

1. Land Use/Prime Farmland – The treatment system lagoon improvements will occur on land owned by the town. Approximately 7 acres of agriculture land (currently leased from the town for corn farming) will be disturbed to construct the third cell. Improvements will also occur in and adjacent to the existing cells. The new outfall pipe will be constructed on land either owned by the town or within the Highway 253 Right-Of-Way. A Montana Department of Transportation utility occupancy agreement will be required and obtained for the new pipe proposed in the right-of-way. The existing treatment cells and land adjacent to existing ditches have been previously disturbed. Work near the river will be completed as required by permit authorized by the Army Corps of Engineers. The Natural Resource Conservation Service (NRCS) indicated that the new facility will be constructed on land classified as “prime farmland if irrigated”. Therefore, the US Department of Agriculture may require a “Farmland Conversion Impact Rating” form be filed with the NRCS as a part of this project.
2. Floodplains – The proposed new treatment system and outfall improvements will not be constructed within the 100-year floodplain of the Yellowstone River.
3. Wetlands – No wetlands will be disturbed to construct the proposed improvements. See Section X: Agencies Consulted of this report for a summary of the U.S. Department of the Army Corps of Engineers comments regarding wetlands that may be adjacent to drain ditch and Yellowstone River.
4. Cultural Resources and Historical Sites – No impacts to cultural resources are anticipated. The proposed improvements should not impact historic or cultural resources since all new facilities will be constructed within existing disturbed areas. The trash dump listed by State Historic Preservation Office (SHPO) was determined to not be within the project area. The Buffalo Rapids Drain Ditch (BRDD) is not listed on the National Register. The SHPO reviewed the proposed project and their comments are summarized in Section X of this report.
5. Fish and Wildlife – The US Department of the Interior Fish and Wildlife Service (USFWS) and Montana Natural Heritage Program determined that the following listed species that are threatened, endangered, and candidates may occur in the

proposed project area.

| BIRDS | | | | |
|------------------------------|-----------------------------|-------|------------|----------------|
| Scientific Name | Common Name | USFWS | USFS | BLM |
| Lanius ludovicianus | Loggerhead Shrike | - | - | Sensitive |
| Centrocercus urophasianus | Greater Sage Grouse | C | Sensitive | Sensitive |
| Falco peregrinus | Peregrine Falcon | DM | Sensitive | Sensitive |
| Haliaeetus leucocephalus | Bald Eagle | DM | Sensitive | Special Status |
| Sterna atinllarum athalassos | Interior Least Tern | LE | Endangered | Special Status |
| Anthus spragueii | Sprague's Pipit | C | - | - |
| FISH | | | | |
| Scientific Name | Common Name | USFWS | USFS | BLM |
| Cycleptus enlongatus | Blue Sucker | - | - | Sensitive |
| Macrhybopsis gelida | Sturgeon Chub | - | - | Sensitive |
| Polydon spathula | Paddlefish | - | - | Sensitive |
| Macrhybopsis meeki | Sicklefin Chub | - | - | |
| Sander canadensis | Sauger | - | - | Sensitive |
| Scaphirhynchus albus | Pallid Sturgeon | LE | Endangered | Special Status |
| MAMMALS | | | | |
| Scientific Name | Common Name | USFWS | USFS | BLM |
| Cynomys ludovicianus | Black-Tailed Prairie Dog | - | Sensitive | Sensitive |
| Vulpes velox | Swift Fox | - | - | Sensitive |
| REPTILES | | | | |
| Scientific Name | Common Name | USFWS | USFS | BLM |
| Apalone spinifera | Spiny Softshell | - | - | Sensitive |
| Phrynosoma hernandesi | Greater Short-horned Lizard | - | Sensitive | Sensitive |
| Heterodon nasicus | Western Hog-nosed Snake | - | Sensitive | Sensitive |
| Apalone spinifera | Spiny Softshell | - | - | Sensitive |

*LE=listed as endangered, LT= listed threatened, PDL=proposed delisted,
DM=delisted, monitored, C= Candidate species for listing

The USFWS indicated that they do not anticipate adverse effects to threatened, endangered, or candidate species or critical habitat to result from the proposed improvements.

The Montana Department of Fish, Wildlife, and Parks were notified of this project and asked to reply with any concerns. They indicated that because the proposed outfall would be located below the historic high-water mark along the bank of the Yellowstone River that a 124-permit would be required, including a

possible site visit.

The Montana Natural Heritage Program was contacted regarding the proposed project and identified several species of concern in the project area. These are listed above and include federal agency's status. Impacts to these species are expected to be minimal for a variety of reasons, including:

- Habitats (large river or riparian forests) will not be impacted
- Most of the project site is within areas previously disturbed for agricultural use (field planting, cultivating and crop harvesting or ditch maintenance)
- Construction would occur during the summer when the animals are in their best condition and when ground animals have the most mobility
- The construction period is relatively short

The Montana Sage Grouse Habitat Conservation Program responded that the site is outside the sage grouse habitat designated core area, general habitat, or connectivity areas for purposes of conservation.

See Section X: Agencies Consulted of this report for a summary of their comments.

6. Water Quality – One primary purpose of the proposed upgrade to the wastewater treatment facility is to further improve the quality of the effluent. Improvements to the wastewater treatment system will provide increased treatment and disinfection of the wastewater prior to discharge to the Yellowstone River, and therefore will have a positive effect on the river.

The existing wastewater treatment facility has mass-based average monthly discharge limits of 43 lbs/day for BOD₅ and 143 lbs/day of TSS. These limits numbers were used to establish the facility's baseline allocated non-degradation load limits (BOD and TSS) in the MPDES discharge permit. Any increase above these baseline allotments is subject to the provisions of Montana's Non-Degradation Policy 75-5-303, MCA, and would require the facility to provide a higher level of treatment for compliance. The BOD limit has been exceeded in discharges to the river, but should not be exceeded after the new treatment system is operational, as the discharge should be more controlled and the treatment (quality) of the wastewater should be improved.

The Yellowstone River is listed on the State's 2014 303(d) list of impaired water bodies. The water-use classification in this section of the river is B-3. Waters classified as B-3 are to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. This reach of the river is listed as fully supporting agricultural use, but is listed as impaired for aquatic life most likely due to a fish-passage barrier (a result of dam). Drinking water and primary contact recreation uses have not been assessed. Due to the threat or impairment resulting from the habitat modification, the water quality is categorized as a 4C for this section of the Yellowstone River and therefore a Total Maximum Daily Load (TMDL) is not required.

Impacts to the Yellowstone River associated with storm water runoff during construction of the outfall pipe will have to be mitigated with appropriate best management practices and carefully maintained during construction.

7. Air Quality – Short-term negative impacts on air quality are expected to occur during construction from heavy equipment in the form of dust and exhaust fumes. Proper construction practices will minimize this problem. Project specifications will require dust control.
8. Public Health – Public health will not be negatively affected by the proposed project. The improved wastewater treatment system will reduce the potential to pollute groundwater and surface water. The water will be treated to the limits as required by the town's discharge permit prior to disposal (to either the BRDD or the Yellowstone River). The proposed UV disinfection system will disinfect the treated effluent to a level safe for contact recreation in the receiving stream, and will decrease the potential of human exposure to pathogenic organisms in the wastewater effluent.
9. Energy – An increase in energy consumption will occur after the new treatment facility is constructed due to the new disinfection system, but energy consumption will be minimized as much as possible through the use of energy efficient equipment such as lighting in the new building for the disinfection system. The consumption of energy resources directly associated with construction of the recommended improvements is unavoidable but will be a short-term commitment.
10. Noise – Short-term impacts from excessive noise levels may occur during the construction activities. The construction period will be limited to normal daytime hours to avoid early morning or late evening construction disturbances. No significant long-term impacts from noise should occur.
11. Sludge Disposal – Sludge removal from the existing lagoons will be dried and hauled to the landfill. Disposal to approved Class II landfills is allowed under certain terms and conditions as approved by DEQ. Documentation must be submitted to DEQ from the landfill that can and will accept the sludge. Federal 40 CFR – Criteria for Municipal Solid Waste Landfills regulates the placement of sludge in landfills.
12. Environmental Justice – Environmental Justice Executive Order 12898: The proposed project will not result in disproportionately high or adverse human health or environmental effects on minority or low income populations. All base sewer rates will be increased equally. No disproportionate effects among any portion of the community would be expected.
13. Wild and Scenic River Act – The proposed project will not impact any rivers designated as wild and scenic by Congress or the Secretary of the Interior.
14. Growth – The 20-year design population is based on a growth rate of approximately 3.3% per year. The proposed improvements should be capable of serving the projected 2034 population of 1,050. The proposed improvements to the treatment system will be a positive feature for the community and will allow the town to manage its growth in a proactive manner and promote urbanization

within its service area.

15. Cumulative Effects – No significant secondary and/or cumulative impacts are anticipated with the proposed improvements. In 1950, the town's population was over 1,500. The town has "platted" lots for about 1,550 people. Moreover, the existing wastewater system was originally designed for a population of 1,550 people. Therefore, the current design population of 1,050 people should not create any cumulative or secondary impacts linked to housing, commercial development, solid waste, transportation, utilities, air quality, water utilization, and possible loss of agricultural and rural lands.

B. UNAVOIDABLE ADVERSE IMPACTS

Short-term construction related impacts (i.e., noise, dust, traffic disruption, etc.) will occur, but should be minimized through proper construction management. Energy consumption during construction cannot be avoided.

VI. PUBLIC PARTICIPATION

Public participation for this project included a public meeting held on March 20, 2014. At the public meeting, the need for the project, the recommended alternative, and budget were discussed. No negative comments on the project were received from the public.

VII. AGENCY ACTION, APPLICABLE REGULATIONS AND PERMITTING AUTHORITIES

All proposed improvements will be designed to meet state standards in accordance with Circular DEQ-2, and will be constructed using standard construction methods. Best management practices will be implemented to minimize or eliminate pollutants during construction. No additional permits will be required from the State Revolving Fund (SRF) section of DEQ for this project after the review of the submitted plans and specifications. However, coverage under the storm water general discharge permit and groundwater dewatering discharge permit, are required from the DEQ Water Protection Bureau prior to the beginning of construction. A 124 Permit from the Department of Fish, Wildlife and Parks, a 404 Permit from the U.S. Corps of Engineers, and a 318 Authorization from the Department of Environmental Quality will be required for any work that occurs in a streambed or (jurisdictional) wetlands, and will be obtained if necessary.

VIII. RECOMMENDATION FOR FURTHER ENVIRONMENTAL ANALYSIS

☐ EIS ☐ More Detailed EA ☒ No Further Analysis

Rationale for Recommendation: Through this EA, DEQ has verified that none of the adverse impacts of the proposed town of Terry wastewater improvement project are significant. Therefore, an environmental impact statement is not required. The environmental review was conducted in accordance with the Administrative Rules of Montana (ARM) 17.4.607, 17.4.608, 17.4.609, and 17.4.610. The EA is the appropriate level of analysis because none of the adverse effects of the impacts are significant.

IX. REFERENCE DOCUMENTS

The following documents have been utilized in the environmental review of this project and are considered to be part of the project file:

1. PER for Town of Terry Wastewater System, May 2014, prepared by Stahly Engineering & Associates, Inc.
2. PER Supplemental Materials provided by Stahly Engineering & Associates, Inc. which include: Figures 4-1 Alternative T-1, Farmland Conversion Impact Rating, 3/1/16 and 5/9/2016; PER revised pages March 2016; and Trash Dump Exhibit 3/25/16
3. Technical Memorandum for Infiltration and Inflow Reduction Plan for Town of Terry, January, 6, 2017.
4. Uniform Application Form for Montana Public Facility Projects for the Town of Terry, April 17, 2014, updated budget and service rate information March 2016
5. Infiltration and Inflow Reduction Plan for the Town of Terry, January 6, 2017

X. AGENCIES CONSULTED

The following agencies have been contacted in regard to the proposed construction of this project:


1. The U.S. Fish and Wildlife Service (USFWS) was asked in a letter by the project consultant for comments on the proposed project. The USFWS indicated that they do not anticipate adverse effects given the proposed improvements to threatened, endangered, or candidate species, or critical habitat. However, they recommended that if work is occurring during the breeding season and may result in the "take" of migratory birds, their nests, or active nests, and that all practicable measures to avoid and minimize the take. Adequate buffers to protect the birds until the young have fledged are recommended. Active nests may not be removed. If active Bald Eagle or Golden Eagle nests occur within one mile of the proposed site, the USFWS recommends compliance with the temporary seasonal and distance (construction) buffers as outlined in the *2010 Montana Bald Eagle Management Guidelines: An Addendum to Montana Bald Eagle Management Plan (1994)*.
2. The Montana Historical Society's State Historic Preservation Office (SHPO) reviewed the proposed project. According to their records, there had been previously recorded historic sites in the area. The historic Buffalo Rapids Irrigation Drain Ditch (BRDD) was eligible for listing on the National Register and a historic trash dump is located within the proposed outfall pipeline. Research has been conducted on the dump site to verify if it will be impacted. Information from local people indicates the dump site was located north of the proposed improvements and soils investigations conducted in April 2016 for design of the new pond did not find trash. So there should be no impact during construction.
3. The U.S. Department of the Army Corps of Engineers (USCOE) reviewed the proposed project. They indicated that the project may impact the Buffalo Rapids Drain Ditch (BRDD) and the Yellowstone River and therefore an application is necessary prior to doing any work. The USCOE indicated that a Section 404 permit would be required for any discharge of fill material below the ordinary high water mark of stream channels, lakes, or wetlands adjacent to these waters and authorization from USCOE would be

- needed.
4. The Montana Department of Fish, Wildlife and Parks (MDFWP) was asked in a letter by the project consultant for comments on the proposed project. They indicated that a 124-permit would be required for work below the historic high-water mark along the bank of the Yellowstone River. MDFWP also was concerned about future water quality (oxygen levels) from the proposed treatment system, but acknowledge that the Department of Environmental Quality would be regulating this aspect of the project.
 5. The Montana Natural Heritage Program was contacted regarding the proposed project and found no plant species of concern, but did identify several species of concern in the project area. These included the Bald Eagle, Peregrine Falcon, Greater Sage-Grouse, Least Tern, Loggerhead Shrike, Pallid Sturgeon, Paddlefish, Sturgeon Chub, Sicklefin Chub, Blue Sucker, Sauger, Spiny Softshell, Greater Short-horned Lizard, and Western Hog-nosed Snake. The impacts to these animal species are expected to be minimal (see Section V.4).
 6. The Department of Natural Resources and Conservation was asked in a letter by the project consultant for comments on the proposed project. They indicated they did not have any comments.
 7. The Montana Department of Environmental Quality indicated that a stormwater discharge permit and construction dewatering permit may be applicable to the project.
 8. The Montana Sage Grouse Habitat Conservation Program was contacted to review this project. They responded that the site is outside the sage grouse habitat designated core area, general habitat, or connectivity areas for purposes of conservation.

EA Prepared by:

 _____ Date 4/5/17
Jerry Paddock, P.E.

EA Reviewed by:

 _____ Date 4/5/17
Mike Abrahamson, P.E.

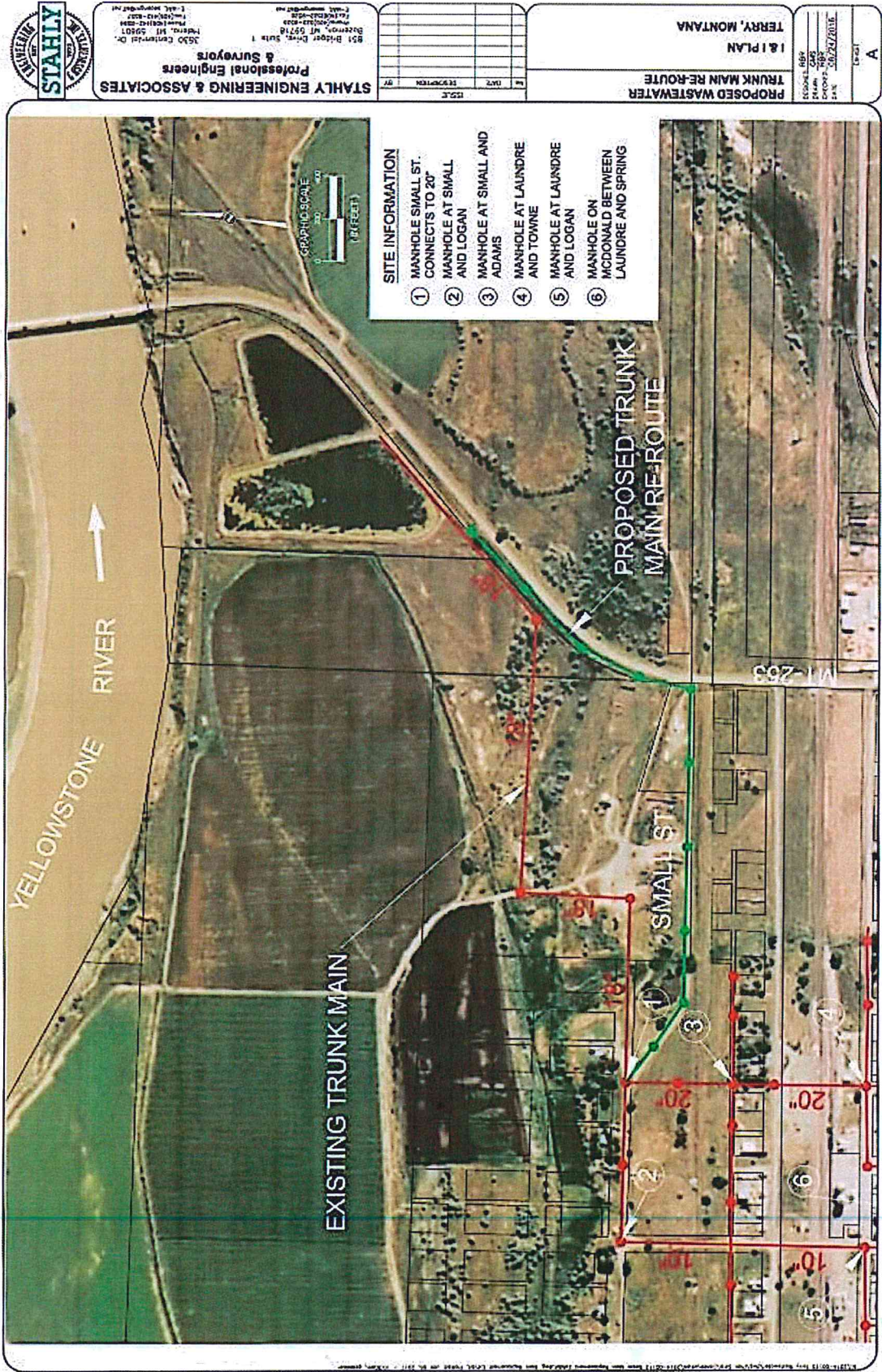
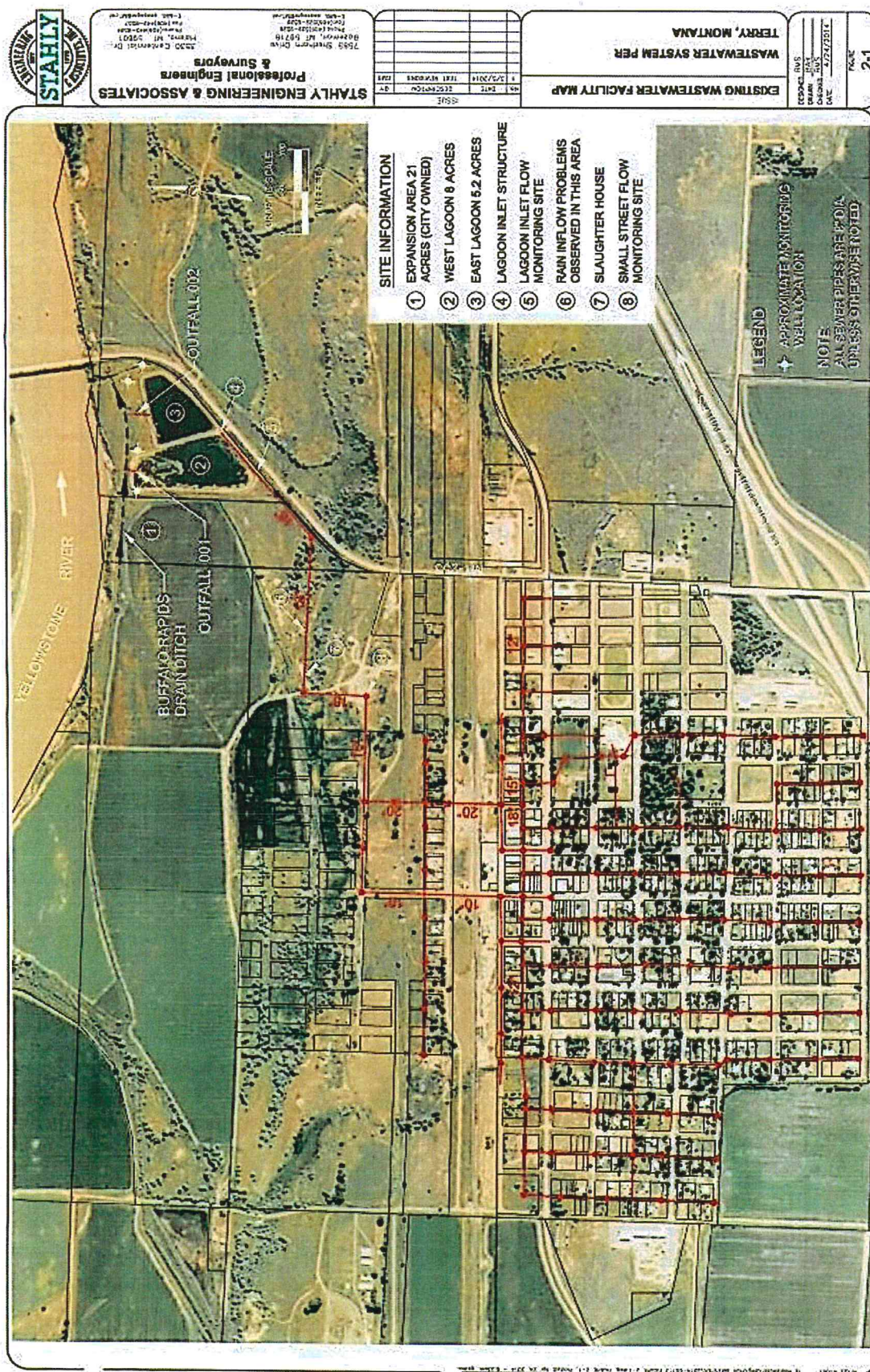
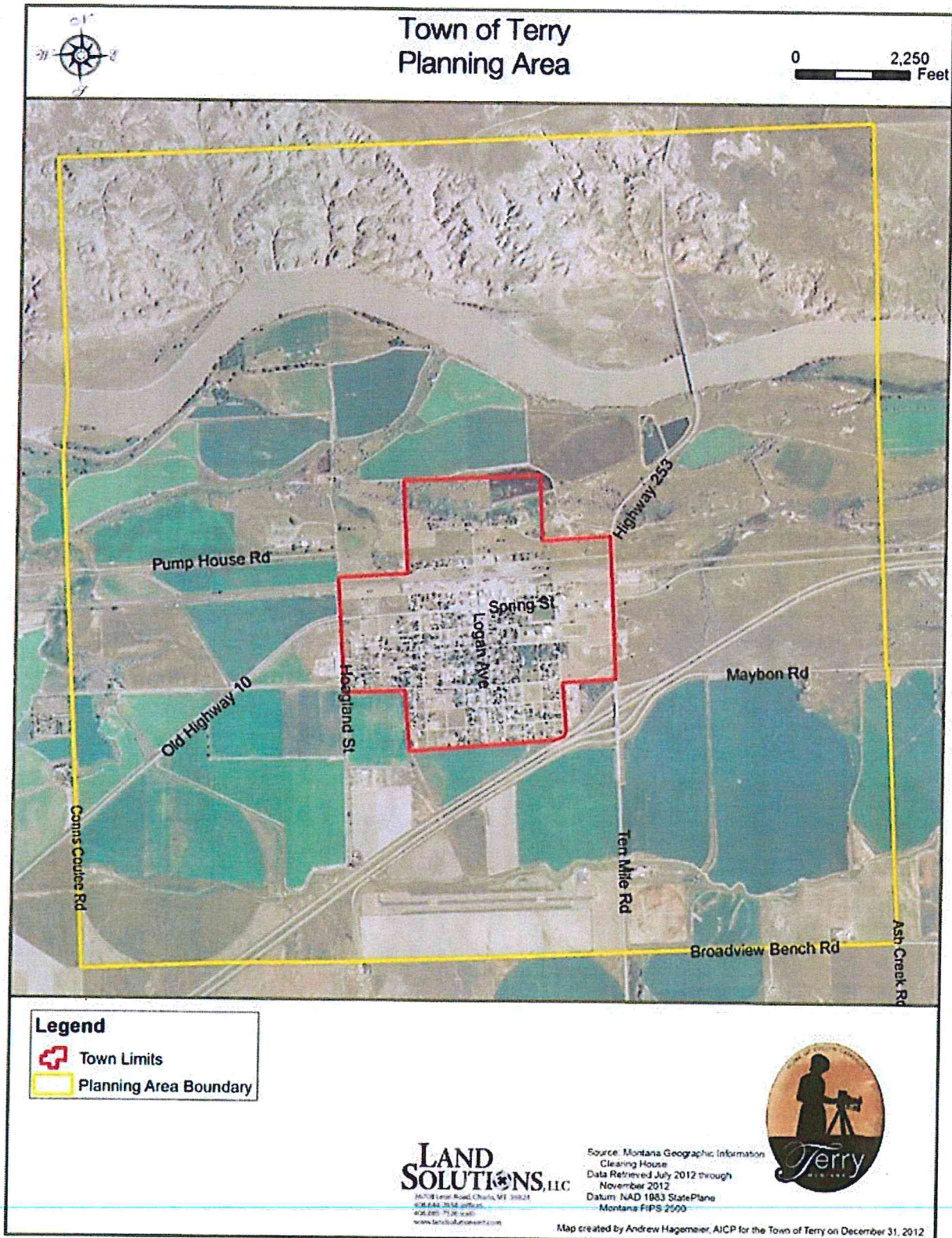


FIGURE 2 – PROPOSED TRUNK SEWER MAIN OUTFALL ALIGNMENT





**FIGURE 4 – TOWN OF TERRY,
MONTANA PLANNING AREA**



FIGURE 5
LOCATION MAP